

WO 03/064461

<110> ImmuneMed Inc.
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 KIM, Young-Jin
 CHOI, Yo-Han
 AHN, Jee-Yin
 WOO, Soo-Dong
 SIN, Song-Woo
 CHO, Min-Kee
 BYUN, Young-Hwan
 KANG, Jeung-Yul

<120> Novel anti-viral VSF protein and hybridoma producing the same

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<151> 2002-02-01

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Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe	
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act ggc tac aac atg aac tgg gtg aag cag agc cat gga aag agc ctt	192
Thr Gly Tyr Asn Met Asn Trp Val Lys Gln Ser His Gly Lys Ser Leu	
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gag tgg att gga aat att gat cct tac tat ggt agt act acc tac aat	240
Glu Trp Ile Gly Asn Ile Asp Pro Tyr Tyr Gly Ser Thr Thr Tyr Asn	
65 70 75 80	
cag aag ttc aag ggc aag gcc aca ttg act gta gac aaa tct tcc agc	288
Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser	
85 90 95	
aca gcc tac atg cag ctc aac agc ctg aca tct gag gac tct gca gtc	336
Thr Ala Tyr Met Gln Leu Asn Ser Leu Thr Ser Glu Asp Ser Ala Val	
100 105 110	
tat tac tgt gca aga gag ^a act ggg acg agg gct atg gac tac tgg ggt	384
Tyr Tyr Cys Ala Arg Glu Thr Gly Thr Arg Ala Met Asp Tyr Trp Gly	
115 120 125	
caa gga acc tca gtc acc gtc tcc tca gct aca aca aca gcc cca tct	432
Gln Gly Thr Ser Val Thr Val Ser Ser Ala Thr Thr Thr Ala Pro Ser	
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Val Tyr Pro Leu Val Pro Gly Cys Ser Asp Thr Ser Gly Ser Ser Val	
145 150 155 160	
aca ctg gga tgc ctt gtc aaa ggc tac ttc cct gag ccg gta act gta	528
Thr Leu Gly Cys Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Val	
165 170 175	
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Lys Trp Asn Tyr Gly Ala Leu Ser Ser Gly Val Arg Thr Val Ser Ser	
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gcc agc aag act gag ttg atc aag aga atc gag cct aga ata ccc aag Ala Ser Lys Thr Glu Leu Ile Lys Arg Ile Glu Pro Arg Ile Pro Lys 225 230 235 240	720
ccc agt acc ccc cca ggt tct tca tgc cca cct ggt aac atc ttg ggt Pro Ser Thr Pro Pro Gly Ser Ser Cys Pro Pro Gly Asn Ile Leu Gly 245 250 255	768
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gat gac cca gat gtc cat gtc agc tgg ttt gtg gac aac aaa gaa gta Asp Asp Pro Asp Val His Val Ser Trp Phe Val Asp Asn Lys Glu Val 290 295 300	912
cac aca gcc tgg aca cag ccc cgt gaa gct cag tac aac agt acc ttc His Thr Ala Trp Thr Gln Pro Arg Glu Ala Gln Tyr Asn Ser Thr Phe 305 310 315 320	960
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gag aga acc atc tca aaa ccc aaa gga aga gcc cag aca cct caa gta 1104
 Glu Arg Thr Ile Ser Lys Pro Lys Gly Arg Ala Gln Thr Pro Gln Val
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tac acc ata ccc cca cct cgt gaa caa atg tcc aag aag aag gtt agt 1152
 Tyr Thr Ile Pro Pro Pro Arg Glu Gln Met Ser Lys Lys Lys Val Ser
 370 375 380

ctg acc tgc ctg gtc acc aac ttc ttc tct gaa gcc atc agt gtg gag 1200
 Leu Thr Cys Leu Val Thr Asn Phe Phe Ser Glu Ala Ile Ser Val Glu
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 Trp Glu Arg Asn Gly Glu Leu Glu Gln Asp Tyr Lys Asn Thr Pro Pro
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gat aca gac agt tgg ttg caa gga gaa att ttt acc tgc tcc gtg gtg 1344
 Asp Thr Asp Ser Trp Leu Gln Gly Glu Ile Phe Thr Cys Ser Val Val
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Thr Gly Tyr Asn Met Asn Trp Val Lys Gln Ser His Gly Lys Ser Leu			
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Glu Trp Ile Gly Asn Ile Asp Pro Tyr Tyr Gly Ser Thr Thr Tyr Asn			
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Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser			
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Thr Ala Tyr Met Gln Leu Asn Ser Leu Thr Ser Glu Asp Ser Ala Val			
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Val Tyr Pro Leu Val Pro Gly Cys Ser Asp Thr Ser Gly Ser Ser Val			
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Thr Leu Gly Cys Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Val			
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Lys Trp Asn Tyr Gly Ala Leu Ser Ser Gly Val Arg Thr Val Ser Ser			
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Val Leu Gln Ser Gly Phe Tyr Ser Leu Ser Ser Leu Val Thr Val Pro			
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Ser Ser Thr Trp Pro Ser Gln Thr Val Ile Cys Asn Val Ala His Pro			
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225 230 235 240

Pro Ser Thr Pro Pro Gly Ser Ser Cys Pro Pro Gly Asn Ile Leu Gly
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Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Pro Lys Asp Ala Leu Met
260 265 270

Ile Ser Leu Thr Pro Lys Val Thr Cys Val Val Val Asp Val Ser Glu
275 280 285

Asp Asp Pro Asp Val His Val Ser Trp Phe Val Asp Asn Lys Glu Val
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His Thr Ala Trp Thr Gln Pro Arg Glu Ala Gln Tyr Asn Ser Thr Phe
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Arg Val Val Ser Ala Leu Pro Ile Gln His Gln Asp Trp Met Arg Gly
325 330 335

Lys Glu Phe Lys Cys Lys Val Asn Asn Lys Ala Leu Pro Ala Pro Ile
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Glu Arg Thr Ile Ser Lys Pro Lys Gly Arg Ala Gln Thr Pro Gln Val
355 360 365

Tyr Thr Ile Pro Pro Pro Arg Glu Gln Met Ser Lys Lys Lys Val Ser
370 375 380

Leu Thr Cys Leu Val Thr Asn Phe Phe Ser Glu Ala Ile Ser Val Glu
385 390 395 400

Trp Glu Arg Asn Gly Glu Leu Glu Gln Asp Tyr Lys Asn Thr Pro Pro
405 410 415

Ile Leu Asp Ser Asp Gly Thr Tyr Phe Leu Tyr Ser Lys Leu Thr Val
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Asp Thr Asp Ser Trp Leu Gln Gly Glu Ile Phe Thr Cys Ser Val Val
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 Gly Ala Arg Cys Asp Ile Gln Met Thr Gln Ser Pro Ala Ser Leu Ser
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gca tct gtg gga gaa act gtc acc atg aca tgt cga gca agt gag aat 144
 Ala Ser Val Gly Glu Thr Val Thr Met Thr Cys Arg Ala Ser Glu Asn
 35 40 45

att tac agt aat tta gca tgg tat cag cag aaa cag gga aaa tct cct 192
 Ile Tyr Ser Asn Leu Ala Trp Tyr Gln Gln Lys Gln Gly Lys Ser Pro
 50 55 60

cag ctc ctg gtc tat gtt gca aca aac tta gca gat ggt gtg cca tca 240
 Gln Leu Leu Val Tyr Val Ala Thr Asn Leu Ala Asp Gly Val Pro Ser

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Arg Phe Ser Gly Ser Gly Thr Gln Phe Ser Leu Lys Ile Asn				
85	90	95		
agc ctg cag cct gaa gat ttt ggg agt tat tac tgt caa cat ttt tat				336
Ser Leu Gln Pro Glu Asp Phe Gly Ser Tyr Tyr Cys Gln His Phe Tyr				
100	105	110		
ggg tct cct cgg acg ttc ggt gga ggc acc aag ctg gaa atc aaa cgg				384
Gly Ser Pro Arg Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg				
115	120	125		
gct gat gct gca cca act gta tcc atc ttc cca cca tcc agt gag cag				432
Ala Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu Gln				
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tta aca tct gga ggt gcc tca gtc gtg tgc ttc ttg aac aac ttc tac				480
Leu Thr Ser Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr				
145	150	155	160	
ccc aga gac atc aat gtc aag tgg aag att gat ggc agt gaa cga caa				528
Pro Arg Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln				
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aat ggt gtc ctg aac agt tgg act gat cag gac agc aaa gac agc acc				576
Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr				
180	185	190		
tac agc atg agc agc acc ctc aca ttg acc aag gac gag tat gaa cga				624
Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg				
195	200	205		
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His Asn Asn Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro				
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Ala Ser Val Gly Glu Thr Val Thr Met Thr Cys Arg Ala Ser Glu Asn

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Ile Tyr Ser Asn Leu Ala Trp Tyr Gln Gln Lys Gln Gly Lys Ser Pro

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60

Gln Leu Leu Val Tyr Val Ala Thr Asn Leu Ala Asp Gly Val Pro Ser

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70

75

80

Arg Phe Ser Gly Ser Gly Ser Gly Thr Gln Phe Ser Leu Lys Ile Asn

85

90

95

Ser Leu Gln Pro Glu Asp Phe Gly Ser Tyr Tyr Cys Gln His Phe Tyr

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105

110

Gly Ser Pro Arg Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg

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Leu Thr Ser Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr

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150

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Pro Arg Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln

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 Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr
 180 185 190
 Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg
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